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COMMUNIST CHINA GNP

This report was prepared as a part of the US contribution to a NATO study comparing economic trends in the Free World and the Sino-Soviet bloc. The other part of the US contribution concerned with Communist China is: C-4, Communist Chinese Manpower and Physical Production, 1950-1955.

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A. Trends in the Gross National Product of Communist China

Communist China's Gross National Product at market prices at the current exchange rate was of the order of \$37 billion in 1955. This current output provides a per capita product on the order of \$60. This low output reflects an underdeveloped agricultural economy whose population supports only one-sixth of its numbers in non-farm pursuits and in which the pressure of population on agricultural resources and a lack of capital have resulted in an extremely low level of labor productivity.

From 1950 to 1955, GNP at factor cost increased at an average annual rate of about 10 percent. The average annual increase in GNP from 1950 to 1952 is estimated at 14 percent, reflecting a recovery of agricultural output, restoration of industrial output, and mobilization of an under-employed labor force by the government for its administrative, military, and investment programs. The average rate of increase was about 7 percent annually from 1952 to 1955, during which time industrial production continued to increase rapidly at about 16 percent a year, contrasting sharply with an average annual increase of less than 2 percent in agricultural output.

Of the rise in GNP at market prices of about 63 percent between 1950 and 1955, the government has directed about 40 percent of the increase in output to the expansion of its military, administrative, and investment programs. Government expenditures as a proportion of the GNP increased from one-sixteenth of GNP in 1950 to nearly one-third in 1955, while government expenditures for investment increased from one-quarter to one-half of total government expenditures. During this period, gross investment increased from about 10 percent of GNP to 16 percent while government purchases of other goods declined somewhat.

Since 1950 personal consumption, excluding the communal services represented by the government's outlay for education, health and culture, has increased by 56 percent. This increase overstates real gains in personal consumption because of the movement of some 20-25 million persons from rural to urban, industrial, and mining areas and the expanded purchase and resale in rural areas of grains and other consumer goods formerly processed and traded outside organized commercial channels.

B. Communist China's Gross National Product in Current Prices

The estimates of Communist China's Gross National Product for 1950-1955 in current prices, presented in Table 1, were derived from five basic components: (1) Chinese Communist aggregate figures for retail sales, (2) Chinese Communist budget figures for investment and for government purchases of goods and services, (3) imputed home consumption of farm produced consumer goods, (4) estimated changes in inventories and annual estimates of private investment in agriculture and in the nonagricultural business sector, and (5) an estimate of the value of house rent and miscellaneous consumer services.

TABLE 1. Gross National Product of Communist China, 1950-1955  
(Millions of Yuan at Current Market Prices)

	1950	1951	1952	1953	1954	1955
Retail Sales	16,790	22,300	27,660	35,040	39,190	40,300
Less: Business and Government Purchases plus Imputed Wages in Kind	850	1,080	285	345	340	360
Less: Purchase of Production Materials by Peasants	-2,065	-2,515	-3,000	-3,370	-4,040	-4,850
Imputed Farm Home Purchases	11,215	12,810	16,300	16,395	15,120	17,400
House Rent						
Agricultural	1,005	1,175	1,580	1,700	1,655	1,790
Nonagricultural	1,410	1,790	2,450	3,315	3,385	3,650
Miscellaneous Consumer Services						
Agricultural	1,580	1,885	2,300	2,485	2,945	3,180
Nonagricultural	1,290	1,640	2,240	3,030	3,095	3,335
Total Consumption Expenditures	32,075	40,165	49,815	58,940	61,690	65,165
Gross Investment						
State Investment	1,360	2,755	5,910	8,140	11,680	12,245
Private						
Agricultural	825	1,005	1,200	1,350	1,475	1,765
Nonagricultural	180	215	250	320	330	330
Net Increases in Inventories	2,420	3,150	2,700	3,140	2,860	1,980
	4,785	7,125	10,060	12,950	16,345	16,320
Net Foreign Investment	-165	-670	-510	-740	-1,105	-1,000
Government Purchases of Goods and Services	4,800	8,000	7,600	9,540	9,530	10,015
Total Gross National Product at Market Prices	41,495	54,620	66,965	80,690	86,460	90,500

TABLE 2. Communist China's Gross National Product at Factor Cost  
(In 1952 Prices)  
(Billion Yuan - New Currency)

Sector Origin	1936	1950	1951	1952	1953	1954	1955
Agriculture, Forestry and Fishing	27.4	26.2	28.1	30.5	30.5	30.2	32.0
Industry	5.7	5.8	7.4	9.6	11.9	13.6	14.9
Modern Transportation and Communications	.4	.6	.9	1.2	1.6	1.9	2.2
Trade (including native transportation and miscellaneous business services)	7.4	6.1	7.5	9.0	10.4	11.9	12.1
Construction	1.0	1.1	1.9	2.2	2.9	3.5	3.5
Government	1.4	2.6	2.8	3.2	3.4	3.5	3.4
Miscellaneous Services and Rent							
Rural	3.2	3.1	3.3	3.6	3.6	3.6	3.8
Urban	3.2	3.0	3.8	4.0	4.9	5.3	5.6
Total GNP (at factor cost)	49.7	48.5	55.7	63.3	69.2	73.5	77.5
Estimated Value of Indirect Taxes	-	2.3	2.9	3.7	4.6	5.2	5.2

TABLE 3. Communist China's Gross National Product by End Use (1952 prices)  
(Billions of Yuan)

	1936	1950	1951	1952	1953	1954	1955
Consumption	43.8	38.6	43.9	49.8	55.1	57.4	60.4
Government Purchases	3.6	7.1	8.3	7.6	8.9	8.7	9.2
Net Foreign Investment	0.2	-0.1	-0.6	-0.5	-1.4	-0.9	-1.1
Investment (residual)	5.0	5.2	7.0	10.1	11.2	13.5	14.2
Total GNP (at market prices)	52.6	50.8	58.6	67.0	73.8	78.7	82.7
Index at Market Prices	78	76	87	100	110	117	123

TABLE 4. Sector Indexes for Communist China's Gross National Product at Factor Cost  
(1952 constant prices)

Sector Origin	1936	1950	1951	1952	1953	1954	1955
Agriculture, Forestry, Fishing and Rural Subsid.	90	86	92	100	100	99	105
Industry	59	55	77	100	124	142	155
Modern Transportation and Communications	31	53	77	100	131	160	183
Trade (including native transportation and miscellaneous business services)	82	68	83	100	116	132	135
Construction	44	48	86	100	134	159	159
Government	45	82	89	100	105	110	107
Miscellaneous Services and Rent							
Rural	90	86	92	100	100	99	105
Urban	80	76	94	100	123	133	139
GNP (at factor cost)	79	77	88	100	109	116	122
Percent Increase over Previous Year	--	--	14	14	9	6	5

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## 1. Retail Sales

Retail sales figures for 1950 and 1952-55 as given in Chinese Communist statistics are defined to include all final sales to consumers. The value of retail trade handled by state enterprises and cooperatives can be determined with a high degree of accuracy by the Chinese from the flow of cash payments through the state banking system. Therefore, the reliability of these data probably increased considerably as the proportion of retail trade controlled directly by the state expanded from 13 percent in 1950 to 82 percent in 1955, and as private wholesale trade decreased from 76 percent in 1950 to 5 percent in 1955.

The estimate of total cash purchases of consumer goods for household consumption was obtained by making three adjustments to retail sales as defined by the Chinese Communists. First, a deduction was made for sales to peasants of production materials which form a substantial proportion of farm purchases. Second, sales of consumer goods such as coal and stationery for business and government use, though not great in value, were deducted. Third, military and government allowances of grain and other goods in kind were added. The value of these imputed payments in kind in 1952 was between two and three percent of retail sales.

The retail sales figures for 1953-55, in Table 1, were adjusted for business and government purchases and for imputed military and government allowances in the same ratio as budget figures of government purchases of goods and services. For 1950-51, an additional allowance was made for government personnel transferred by 1952 from food allowances in kind to money wages.

Deductions from retail sales of cash purchases of production materials by farmers are estimated at 25 percent of total farm cash income except for an estimated increase of 6 percent in cash purchase of production materials in 1955 over 1954. Estimates of farm cash income for 1953-54 are based on data in Communist publications of total cash purchases from the agricultural population in 1953 and 1954 as percentages of total agricultural production. The same proportion for 1952 agricultural output sold in commercial channels was used as that given for 1953. For 1950 and 1952, farm cash income was estimated in the same proportion to agricultural taxes as in 1952. Farm cash income in 1955 was estimated indirectly on the basis of fragmentary information on state procurement of farm products in 1955.

## 2. Imputed Value of Farm Home Consumption

The value of imputed farm home consumption for 1950-55 was estimated on the basis of a physical production series of basic food crops. The volume of basic food crops leaving the farm was subtracted from total output as were estimates of seed, feed, and waste to determine farm home consumption. The value of farm home consumption in current prices was obtained by the use of estimated 1952 farm prices adjusted by a price index for the state procurement of basic food crops.



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Although data on the volume of food crops leaving the farm are available in a much greater degree than previously, both actual farm production and the proper valuation to be placed on farm home consumption can lead to wide margins of error in the estimates for Gross National Product. The estimate of imputed farm home consumption constitutes nearly 35 percent of total estimated consumption expenditures in 1952.

### 3. House Rent and Miscellaneous Consumer Services

Estimates of 1952 farm expenditures for miscellaneous consumer services are based on sample studies of farm per capita expenditures. Farm house rent was imputed in terms of proportions of farm income to be found in prewar studies. Rent and consumer services for the nonagricultural sector are based on sample studies of urban per capita expenditures checked against available estimates of labor force and average income for these occupations. For the years 1950-55 farm expenditures for house rent and miscellaneous consumer services were estimated as a constant proportion of farm income. For the nonagricultural sector, expenditures for these services were estimated to remain a constant ratio to urban retail sales.

### 4. Government Purchases

Budget data permit relatively reliable estimates of government purchases of goods and services for the years from 1950 to 1955. Total budgeted figures for military expenditures are included in this category although some of these expenditures may be for military construction, which could more properly be included under investment expenditures. Educational expenditures were adjusted for estimated transfer payments for student subsidies and for basic construction expenditures given in Communist statistics. In addition, a miscellaneous category of budget expenditures includes certain current expenditures for tax organs and for military transportation. These have been estimated on the basis of 1950 expenditures, when expenditures for interest and state reserves were small and moved by tax revenue for the other years.

### 5. Gross Investment

#### a. State Investment

Budget data give expenditures for basic construction for the years from 1952 and 1955 and some basis for estimating expenditures for state investment in 1951 and 1950. Budget data also provide a series for budget expenditures for "economic construction" which include certain provisions for loans for working capital of state enterprises and also for expenditures chargeable to gross investment, such as geological surveys, special training courses, major repairs. Based on data in the Five Year Plan, roughly half of the residual expenditures over and above basic construction expenditures are estimated to be for expenditures chargeable to gross investment and half is subtracted as working capital for state

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enterprises. State investment for 1950-55 is therefore estimated as expenditures for basic construction plus half of the residual expenditures for economic construction.

b. Private Investment

On the basis of sample studies of farm expenditures 3 percent of gross farm income is expended for farm tools, irrigation, and related expenditures. This estimate is consistent with estimates in the Five Year Plan of total expected farm investment. This proportion was therefore applied to estimated farm income for all years from 1950-1955. Data on gross investment in the private nonagricultural sector is not available, but an estimate of such investment for the nonagricultural private sector was made on the basis of the same proportion for private investment as in the agricultural sector.

c. Increase in Inventories

Increases in inventories were crudely estimated on the basis of figures for working capital requirements for state and cooperative trade for 1951, 1952, 1953, and 1954, and comparable allowances for private trade in terms of trends in private trade turnover. Similarly, provisions for short-term loans for state industry based on the 1953 and 1954 figures were used as a basis for estimating inventory requirements for industry. Grain reserves held by the state were estimated and included in the level of inventories.

d. Net Foreign Investment

Net foreign investment was estimated on the basis of calculated import surpluses for the years from 1950 to 1955.

C. Communist China's Gross National Product in Constant Prices

Indexes of overall price changes, such as state procurement price of grain and values for various fen (e.g. Victory bond unit and wage units) are generally available. However, component indexes of wholesale prices are seldom given and reliable series for individual commodities are generally not available. Therefore, annual estimates of income by sector of origin were obtained by moving the sectors in the 1952 base year study, by indexes. The total GNP series thus derived are used for Table 3 in which consumption expenditures and government purchases were deflated by aggregate price indices and investment is a residual. The estimate for 1936 should be used as only the roughest guide based as it is on estimated production trends for consumer goods and ignoring great changes in Chinese economic and political institutions since 1936.

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1. Estimates of Income Originating in 1952

a. Agricultural Sector

Gross farm income in 1952 was derived from estimates of physical production of an extensive list of agricultural commodities valued at estimated farm prices. Fodder and other crops and miscellaneous industrial crops which were not valued directly, were assumed to be 5 percent of total farm output. An allocation of gross value of output for farm production materials show farm production expenses as nearly 20 percent of estimated gross farm production. This estimate is supported by sample studies of rural per capita expenditures which indicate this percentage for production expenses. About 15 percent of production expenses are estimated to be purchases of tools and expenditures for irrigation and other investment expenditures based on sample studies of farm expenditures and the remainder for fertilizer and other current production costs.

b. Nonagricultural Business and Government Sectors

Total income originating in the nonagricultural business and government sector was estimated from total sales including retail sales as adjusted, final sales to government, and estimated investment expenditures, subtracting farm cash sales and agricultural taxes. Income originating in trade and miscellaneous services was based on estimates of trade turnover and trade mark-up. The allocation of trading costs included in the trade mark-up estimate was derived from estimates of state trading costs obtained from official data. The estimate of income originating in transportation and communications was derived from calculated total revenues less the estimated cost of material inputs. Income originating in government and construction were based on labor force and wage data.

c. House Rent and Miscellaneous Consumer Services

The value of house rent and miscellaneous consumer services is estimated as a proportion of total consumption expenditures based on sample rural and urban studies of costs of rent and such expenditures.

2. Sector of Origin Indexes

a. Agriculture

Estimates of trends in agricultural output are of unknown reliability. The Communist figures on production of basic food crops are believed to involve overstatements of increases as coverage improved. Therefore, an independent estimate of the production of basic food crops was used for the 1950-55 trend. In the absence of data on which to estimate trends in industrial crops and peasant handicraft production, the estimated trend in cotton production was used for all output of industrial crops.

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b. Industry

The index for industry is based on trends in the production of all commodities not consumed on the farm weighted by estimated value added in 1952 for the industries concerned. Aggregate values for industrial production in 1952 prices are available in Communist publications and differ mainly from the index used in showing a much larger rise in the gross value of light industry in 1953 than the index used. This difference is believed to be due mainly to greater coverage after 1952 in production of handicraft workshops and in light industry.

c. Transportation

The index of modern transportation is based on estimated net revenue per ton kilometer of freight and passenger miles for rail, water, and highway transportation against annual figures published by the Chinese Communists for each form of transportation.

d. Construction

As an index of construction activity the index of cement output was used.

e. Trade

Trends in trade, native transportation, and other business services are weighted by estimated gross revenue secured by subtracting from the estimated market value of agricultural products and production of light industry, heavy industry and individual handicraft, the estimated value of these sectors at producer prices. For trade in agricultural products trends in estimated farm cash income in constant prices was used. For trade in industrial and handicraft products, indexes of estimated gross value of output are used against the base year. Trends in indirect taxes are also based on the same indexes against rough estimates of commodity taxes in 1952 for each broad sector of production.

f. Government

The index of income originating in government is based on estimated wages derived from labor force and wage data, and from budget expenditures for military, educational and propaganda, and administrative purposes. These estimated wages and allowances were then deflated by data on average real wages for office and industrial workers to secure an estimate of income originating in constant prices.

g. Miscellaneous Services and Rent

Current expenditures for house rent and miscellaneous consumer services in rural areas were deflated by the price index for farm procurement available in Communist publications. The estimates for nonagricultural

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rent and services in current prices were deflated by the retail price index to estimate nonagricultural rent and consumer services in constant prices.

3. Estimates of Expenditures by End Use

a. Consumption

The estimates of current consumption expenditures were deflated by two price indexes to secure the estimate in constant prices for 1950-55. An index of production of consumer goods was used to secure the estimate for 1936. An index of farm procurement prices is available for 1950-53 and farm prices are estimated to have remained constant since 1953. This index was used to deflate the value of farm home consumption, farm purchases of consumer services, and for house rent. A retail price index for 1952-55 was secured from data on average money wages and average real wages in Communist announcements. For 1950 and 1951 a retail price index was derived from trends in the production of consumer goods against figures in the Five Year Plan on unit retail sales of particular commodities. This retail price index was used to deflate sales of consumer goods other than farm home consumption, nonagricultural rent, and consumer services.

b. Government Purchases

Wages for government and military personnel were deflated as in the index for sector origin. Estimated imports of military equipment and other military procurement for 1950-55 were adjusted for an estimated rise in the current prices of such imports from the USSR from 1950 to 1953 of 1 percent a year. The remainder of current government purchases as estimated from budget data was deflated by the retail price index.

c. Net Foreign Investment

The import surplus for each year in comparison to 1952 was adjusted on the basis of figures for exports and imports from 1950-1955 converted into 1950 US dollars.

d. Investment

No data is available on trends in construction costs and in prices of machinery and equipment. Therefore, no price deflator could be secured for 1950-1955. This category of expenditures was carried as a residual against the total GNP in constant prices for 1950-1955. For 1936 cement production relative to 1952 was used to secure an estimate of investment in 1936 (1952 prices) and to secure a total GNP at market prices.

D. The Dollar Valuation of Communist China's GNP

By using the cross rate on the official Chinese Communist telegraphic transfer rate of ¥ 6.266 for the pound sterling,\* Communist China's GNP at

\* This rate was in effect for all of 1952 except after December 6 when a ten percent devaluation took place. The Chinese Communists have quoted only note rates of the US dollar since 1951.

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market prices was about US \$30 billion in 1952. Such a conversion though a convenient method for avoiding the difficulties of complex comparisons of the value of output in terms of Chinese and US prices, may yield quite erroneous impressions of the value of Chinese output, especially in view of the almost complete absence of trade between the two countries and differences in their institutions and economies. More complex computations, which are to be preferred conceptually, suffer, however, from the introduction of biases arising from inadequate data. The limited information at hand prevents any real appraisal of these biases. The wide range of values which may be associated with Communist China's GNP are illustrated by the following two extremes. It is estimated that the dollar value of Communist China's output in 1952 if produced in the US would have been about US \$74 billion. On the other hand, the yuan value of China's GNP in terms of US end-use patterns is equivalent to about US \$20 billion.

TABLE 5

Dollar Valuation of Communist China's GNP, 1952

	Billion 1952 Dollars		
	Chinese Communist GNP		
	In domestic prices converted at ¥ 2.24	At US Prices	From US Product Mix <sup>a/</sup>
Personal Consumption	22.2	54.0	14.4
Government Purchases	3.4	15.8	2.5
Gross Domestic Investment	4.5	4.4	2.8
Net Foreign Investment	-.2	-.2	
Total	29.9	74.0	19.8

<sup>a/</sup> Communist China's GNP in yuan as a percent of US GNP in yuan applied to US GNP in dollars gives a total value in dollars slightly higher than a total of figures using Chinese weights.

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The procedure used for the second estimate was to value final sales of Chinese output in terms of US prices and for the third estimate to value US final sales in terms of Chinese prices. The difficulties in making accurate valuations of this kind are apparent. Differences in the quality of goods and services are tremendous and adequate commodity and service descriptions are, in most cases, lacking for Chinese Communist output. Many US products especially those of a highly technical nature are not available in Communist China and therefore no prices are quoted. On the other hand, many native Chinese products are uncommon or not available in the US and much of the effort expended by individual households, such as cloth-making, is not an important part of US output. Thus, these estimates are extremely crude and serve mainly to demonstrate the fundamental technological differences in production and basic differences in use patterns of the two economies.

To provide an estimate of Chinese Communist GNP in 1955 the US implicit price deflators for GNP\* were applied to the 1952 dollar results. The inadequacies of this procedure are obvious and seriously restrict the usefulness of the results (presented in Table 6) for the purposes of international comparison.

TABLE 6

Dollar Valuation of Communist China's GNP, 1952

	Billion 1955 Dollars		
	In Domestic Prices Converted at Cross Rate	At US Prices	From US Product-mix
Personal Consumption	22.7	55.3	14.8
Government Purchases	3.6	16.8	2.7
Gross Domestic Investment	4.6	4.5	2.9
Net Foreign Investment	-.2	-.3	
Total	30.7	76.3	20.4

#### E. Trends in Production Through 1967

The Chinese Communists in the past year have announced ambitious targets in various fields for 1967, the final year of the third five year plan. Although these figures appear to be only initial planning estimates, they illustrate the scale of development which the regime is contemplating. These targets suggest a level of GNP in 1967 3.4 times the 1955 level, an average annual increase for the twelve-year period of about 11 percent. Since population is expected to reach 760 million in 1967, per capita product would increase 2.7 times if such goals were achieved. The rise in output is

\* US Department of Commerce, Survey of Current Business, July 1956.

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roughly comparable to official Soviet statements of increases in their output from 1928 to 1940 and the twelve-year program may be based on this trend in output in the USSR since China's industrial output in 1955 is roughly comparable to that of the USSR in 1928.

These programs, described for the most part as twelve-year plans (1956-1967), have been announced at intervals by the ministries concerned since the publication of the First Five Year Plan in mid-1955. These long-range plans serve an evident propaganda function in dramatizing the spectacular expansion expected over such a period. However, their main purpose appears to be to establish rough guide lines within which to orient and direct the shorter range goals of the Second Five Year Plan now under preparation.

The twelve-year plan for agriculture calls for an increase of 150-200 percent in grain output to 460-550,000,000 tons and of 200 percent in raw cotton production to 4,500,000 tons. Of the increase in grain output, only 50,000,000 tons are to be obtained from the cultivation of new lands. The larger share is to be secured from increasing yields on existing acreage through such means as irrigation, soil improvement, flood control, improved seeds, disease and pest controls, increased fertilization, and more intensive crops and cropping practices.

The output of rice, the major grain crop, is to be increased between 1952 and 1967 from 65,000,000 tons to 200,000,000 tons with an increase in the cultivated area from 25,000,000 to 40,000,000 hectares, in the crop area (from growing two or more crops per year) from 28,000,000 to 49,000,000 hectares, and in the yield from 2.25 tons to 4.5 tons per hectare. The expansion in cultivated area will come in part from the cultivation of new lands (5,000,000 hectares) but mainly from the irrigation of existing dry land farms (9,000,000 hectares). The supply of plant nutrients will be a critical problem, and it is planned to supply 3,000,000 tons of chemical fertilizer, to expand green manure crops, and to increase collection of manures and compost materials to achieve targeted yields.

During the same period the forest area is to be increased from 7 percent to 18 percent of mainland China's land area, providing adequate timber reserves to meet the industrialization requirements and conservation forests to control erosion and wind-blown sands.

The transportation network is to be greatly expanded, with the rail mileage increasing from 16,800 in 1955 to 50,000 in 1967 and the road mileage from 93,000 to 620,000 in the same period. Rail trunk lines will then connect all important cities and economic areas, and most communities will be served by motor roads.

Coal production is projected to increase from 93,000,000 tons in 1955 to 300,000,000 tons in 1967, while steel production is to increase from 2,850,000 tons to over 28,200,000 tons during the same period. Steel production will be centered in three major iron and steel complexes at Anshan (Manchuria), Wuhan (Central China), and Paotou (Inner Mongolia). Previous steel output goals had been given as 10,000,000 tons in 1960-61 and 14,000,000 tons in

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1962. Only the US and the USSR currently produce more than the level planned by Communist China for 1967.

Output goals in other heavy industries have not been quantified, although it was stated that investment in the second ~~and~~ third five year plans (1958-1967) would be shifted heavily toward the engineering industry, the output of which would include heavy and complex machinery and equipment which are now being imported. All types of machine tools, major power equipment, trucks, tractors, aircraft, ~~steam~~ and diesel locomotives, and ocean vessels are among the items scheduled to be produced during this period.

The trends suggested by these targets indicate an increase in agricultural output in 1967 to a level about 275 percent of 1955, or an average annual increase in output of 8 percent. Industrial output in 1967 would be more than five times 1955, an average annual increase of almost 15 percent. If such increases in industrial output were achieved, industry would increase its contribution to the economy from 19 percent in 1955 to 30 percent in 1967. The three sectors; industry, modern transportation, and construction, would be raised from 27 percent of total output in 1955 to almost 40 percent in 1967.

The allocation of GNP by end-use can be roughly estimated by certain features of the Chinese Communist long-term plans. They have stated that basic investment during the Second Five Year Plan will be double that during the First Five Year Plan. An expansion of government expenditures can be charted on the basis of ambitious plans for improving literacy and health and the presumed intention to strengthen the military forces. The projected output of food crops and cotton, as the major components, provide an indication of expected trends in consumption. The tentative estimates, based on such scraps of information, are as follows:

Item	Average Annual Increase	Percent of Total		1967 over 1955
		1955	1967	
Consumption	9%	73%	60%	280%
Government Expenses	11%	11%	10%	340%
Investment	16%	16%	30%	600%
GNP	11%	100%	100%	340%

On this projection, gross investment over the 12-year period amounts to about three times the increase in output, ~~and~~ although capital consumption allowances are uncertain, new capital formation for the economy as a whole would probably be about twice the estimated increase in output, indicating that the Chinese Communists expect a rather low and favorable capital-output ratio over the next twelve years. In the distribution of new capital formation, about half is expected to be absorbed in industry, modern transport, and construction--a proportion smaller than that projected in the First Five Year Plan but one which allows for a fairly liberal capital-output of 3:1 in this sector. "Non-productive" investments in housing, schools, and

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urban facilities should, according to Chinese Communist statements, amount to about 15 percent of the total, based on Soviet experience. Agriculture may thus absorb up to 35 percent of new capital formation, a considerably higher proportion than that projected in the First Five Year Plan but one which still results in a very low capital-output ratio of about 1.5:1. However, the agricultural plan clearly expects to achieve large increases in output rather cheaply through improvements in agricultural practices and the mobilization of underemployed farm labor to make extensive land modifications and soil improvements, without remuneration.

It is difficult to judge the feasibility of this ambitious program for economic development. The targets for coal and steel may be relatively firm, for planning appears to be more advanced in these industries than in others. However, formidable problems are posed in the rapid development of a balanced heavy industrial base to utilize the projected steel and coal output. Much will depend upon the regime's ability to foster a growing reservoir of industrial skills and to carry out astute industrial planning. As the industrial base grows larger and more complex, the projected increases may be more difficult to achieve. The rising investment burden will be met increasingly from domestic production of machinery and equipment, and failures in this sector may be expected to affect the level of investment.

The agricultural plan seems highly over-optimistic. Few countries have shown an increase of 4 percent annually in agriculture over a long period of time, and such a rate would still be only half the phenomenal rate proposed by the Communist planners. Although technical developments in agriculture may suggest that the goal is theoretically possible, it would seem extraordinary that in 12 years new practices could be tested and developed in the diverse farming areas of China by the present limited technical staff and then disseminated to the great mass of illiterate peasants. A suggestion that the Chinese Communists themselves may not seriously view this target may be found in the fact that the plan, while calling for great efforts and sacrifice, appears to provide a more than doubling of per capita private consumption. Thus, the regime may already have discounted the possibility of failure in its agricultural goals and have planned to restrict the rise in consumption accordingly. Should agriculture expand at only half the targeted rate while plans for other sectors were fulfilled, the GNP would increase between 1955 and 1967 by 2.3 times rather than 3.4 times. Consumption would then probably drop to about half the GNP (but would permit a rise of one-quarter in per capita private consumption), while investment would rise to nearly 40 percent of the GNP. Should increases in agricultural output fall below 4 percent annually it would probably be necessary to reduce planned investment as well as consumption.

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